**Statically and Dynamically typed languages**

Compiler Execution

Source Code Executable Code

1. Source code is a code written by developer which is in human readable form.
2. Compiler converts the source code written in a high-level language into machine understandable language (Executable Code).
3. Interpreter translates the code of a program in line by line.

**Statically typed programming language:**

Statically typed programming languages do type checking at compile time. The programmer has to mention type of each variable, and the variables are associated with the types so the types remain unchanged throughout the program. The value we give for the variable should be of same type. Java, C and C++ are examples of static program languages.

For example:

String name = “Vamsi” //Here value Vamsi is a string type which is linked to variable name

String name = 5 // Here 5 is a number type which is linked to string variable name. It throws error.

Advantages:

. The types are checked before the code gets executed (compile time) so the mistakes can be caught earlier.

**Dynamically typed programming language:**

Dynamically typed programming languages do type checking at run time. Here the types are associated with values not with variables. When programmer assigns a numerical value to the variable it will be taken as number. If programmer assigns a valve to a variable in double quotes

then it is considered as string. In dynamically typed languages the errors are found at run time.

It allows the types to be changed based on values assigned to the variables, which can result in unexpected errors. Python, JavaScript and PHP are the examples of dynamically typed languages.

For example:

var a = 5 //here the value 5 is a numerical value so it will be considered as a type number

var b = “Vamsi” // here the value Vamsi is word with combination of characters inside double quotes which is consider as string.

Advantages:

. Types are associated with values so it will be easy for programmer to write a code faster.

. The size of entire code will be smaller than the statically typed programming languages so it takes less space to store the code.